

In this context the accident-prone child, so often the focus of parental concern, is considered one of three factors operating within a system of reciprocal causation. The intrinsic characteristics of children associated with suffering injuries such as exploration and risk taking, lack of coordination, or immature judgement are therefore affected by and exert influence upon, the child's physical and social environment and the agent of the injury.

The importance of the child's social and physical environment to injury control has been emphasized by Baker (8). She argues that parental success in protecting children is a function of the frequency with which an individual act is required to protect the child, the amount of effort involved in protecting the child, and various incentives and disincentives to parental action such as cost, discomfort, pain, or pleasure. Margolis and Runyan (9) also emphasize the efficacy of injury prevention programs that change the agent or the environment as opposed to the host or susceptible child. Through investigating the sources of childhood injuries (agent), demographic characteristics of injured children (host), and the social and physical environments of North Carolina's children, we will endeavor in this report to shed light on childhood injury morbidity with a special concern for injury control.

## THE DATA

In order to gather information pertinent to childhood injuries in the state, the Division of Health Services conducted the 1984 Childhood Injury Survey (CIS), an unstratified simple random sample of North Carolina residents with children 19 years of age or less living in the household. Employing a random-digit-dialed telephone survey design, the CIS operated from a frame of randomly generated four-digit numbers attached to active North Carolina prefixes in the 919 and 704 area code regions.

The CIS was designed to gather behavioral, attitudinal, and environmental data from North Carolina households through telephone contact with the person in the household primarily responsible for the children's welfare. Major analytic parameters for the survey include:

- Proportion of households taking various preventive steps to reduce childhood accidents.
- Proportion of households where principle care-giver knows what to do if a childhood accident were to occur.
- Proportion of households at risk of childhood accident.
- Opinion of care-giver on various legal steps aimed at reducing childhood accidents.
- Basic attitudes about household accidents.
- Person-level and event-level injury incidence rates during the last 12 months.

In order to adjust for incomplete coverage of state residents without telephones, the sample was post-stratified by race, marital status, urban/rural residence, and region of the state using 1980 census data. Further adjustment was necessary to compensate for the fact that some households have more than one telephone number and therefore would have had multiple chances of selection.

## RESULTS

The Childhood Injury Survey consisted of sixty-four questions dealing with knowledge, attitudes, and practices of family primary care givers; a roster of children in households and details of their injuries; and nine questions addressing demographic information. Given this wealth of information, selectivity in presenting results is necessary. We will cite only the most interesting and statistically precise results of the survey.

Table 1 and Table 2 present demographic profiles of the households chosen in the survey and the children enumerated in each household.

The modal household in the sample consists of white, married, middle-aged parents with high school diplomas or higher educational levels, living in houses that they own, and earning more than \$20,000 annually. Median age of the female respondents in the sample was 35, with males interviewed having a median age of 36 years.

Demographic details and summaries of serious accidental injuries occurring in the period November 1983 to November 1984 were gathered on 1,817 children 0 to 20 years of age. Fifty-four percent of the children enumerated in the sample households were male and 46 percent were female. While the predominance of males over females in the sample exceeds the differential in the state population (48.6% female in the state), the state percent falls within the 95 percent confidence intervals of the sample estimate ( $\pm 3.4\%$ ).

## Household Environmental Risk Conditions

The environmental conditions that increase the risk of unintended childhood injury can be considered the product of influences emanating from parental knowledge, attitudes, and beliefs, and physical conditions in the household. For example, scalds caused by hot water heater settings in excess of 130 degrees are the product of the parental choices relative to the physical environment.

The CIS was conducted primarily to estimate the frequency and distribution of household environmental conditions in the state that contribute to an enhanced risk of childhood injury. Questions designed to gather this information are presented in Table 3 for automobile safety, water safety, poison prevention, burn prevention, firearm safety, and attitudes related to injury prevention.